

THE PROMOTION AND ENHANCEMENT OF TOMAR’S HERITAGE: THE CREATION OF A VIEWPOINTS ROUTE

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Abstract:

Tomar is a Portuguese city located in the centre of Portugal. Its history is closely linked to the history of Portugal, having been the headquarters of the Military Orders of the Temple and of Christ. The city of Tomar is characterized by a great artistic, cultural and natural wealth, being the Templar Castle and the Convent of Christ its greatest ex-libris. Less known but of great historical value are the viewpoints of this Templar city that allow tourists to enjoy the magnificent and diverse landscapes. In order to promote this heritage, this study aims to create the Viewpoints Route of Tomar. This route involves the study and characterization of the viewpoints, the development of the route and an investment in its promotion and accessibility (access roads, signs, cleaning, etc.). It is intended the use of information and communication technologies to provide information to tourists, namely QR codes, audio guides, virtual reality, augmented reality, among others. It is also intended to use gamification strategies (i.e. geocaching) and the presentation of information in several languages to increase the attractiveness of this heritage. In economic terms, these viewpoints routes are ways of attracting tourists to the region and to create value, promoting the development of infrastructures and new business models. At the same time, there are some environment damages which demands some procedures to assure sustainability.

Keywords: Cultural heritage, touristic routes, viewpoints, information and communication technologies (ICT), gamification, economy, sustainability.

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PROMOÇÃO E VALORIZAÇÃO DO PATRIMÓNIO CULTURAL DE TOMAR: CRIAÇÃO DE UMA ROTA DE MIRADOUROS

Resumo:

Tomar é uma cidade portuguesa situada no centro de Portugal. A sua história está intimamente ligada à história de Portugal, tendo sido sede das Ordens Militares do Templo e de Cristo. A cidade de Tomar é caracterizada por uma grande riqueza artística, cultural e natural, sendo o Castelo Templário e o Convento de Cristo o seu maior ex-libris. Menos conhecidos, mas com grande valor histórico, são os miradouros desta cidade templária que permitem aos turistas desfrutar das magníficas e diversificadas paisagens. Com vista à promoção e valorização deste património, pretende-se com este estudo criar a *Rota dos Miradouros de Tomar*. Esta rota implica o estudo e a caracterização dos miradouros, o desenvolvimento da rota e um investimento na sua promoção e acessibilidade (vias de acesso, sinalética, limpeza, etc.). Pretende-se o uso de tecnologias de informação e comunicação para fornecer informação aos turistas, nomeadamente, códigos QR, áudio-guias, realidade virtual, realidade aumentada, entre outras. Pretende-se também o uso de estratégias de gamificação (i.e geocaching) e a apresentação da informação em diversas línguas, para aumentar a atratividade deste património. Em termos económicos, este tipo de roteiros turísticos é um meio catalisador para a atração de turistas para a região e criação de valor, promovendo o local como destino turístico, o desenvolvimento de infraestruturas e a criação de novas oportunidades de negócio. Contudo, também gera diversos custos ambientais importando a adoção de procedimentos de atuação ambiental de forma integrada e sustentável.

Palavras-chave: Património cultural, rotas turísticas, miradouros, tecnologias da informação e comunicação (TIC), gamificação, economia, sustentabilidade

1. INTRODUCTION

The municipality of Tomar is located in the center of Portugal, with about 40,000 inhabitants and is under the responsibility of the Regional Tourism Authority of the Center, whose territory is extensive and very diverse from a cultural and natural point of view. These factors, initially, could make it difficult for the city to distinguish itself from other points of attraction of the territory in the promotion strategies of the Center of Portugal as a whole, however, it is distinguished by its historical importance in the context of the History of Portugal itself, having hosted the Order of the Templars and later the Order of Christ. These Orders had a very important role in the conquest of the territory that formed Portugal, as a nation and left a very rich heritage to the city of Tomar. In 1983, this distinction was achieved with the integration of the Templar Castle and Convent of Christ in the list of World Heritage Sites.

The Tourism Entity of the Center of Portugal and Tourism of Portugal have promoted some actions that aim to integrate the territory and create cultural links between several points of the territory. Tomar has benefited from some of these actions, such as the Portuguese Monastery Route, a World Heritage, that includes a visit with an integrated ticket to the Jerónimos Monastery in Lisbon, Santa Maria de Alcobaça Monastery, Santa Maria da Vitória Monastery in Batalha and the Convent of Christ in

Tomar. Concerning other theme, it was created the Jewish Quarters’ Tour, where the Synagogue of Tomar stands out, being the oldest Jewry in Portugal among the ones that are marked on the Route. More recently, the Paths of Faith, promoted by Tourism of Portugal, have also given prominence to the city since it is identified as one of the stops on the Portuguese Saint James Way and on the Fátima Ways due to its proximity.

Due to these efforts to promote the territory, among others, over the last decade, tourism in Tomar has seen some changes and there has been an evolution both in terms of the number of tourists and their average stay. This can be seen through the data available in PORDATA (Portugal Contemporary Database) that indicates that in the last decade there was an increase in overnight stays in the order of 46%, which is a substantially significant value (Pordata, 2019).

As for the average stay and according to the data published by the same database, the increase was not so relevant, with an increase of only one tenth, in approximately a decade: 1.5 nights in 2009 to 1.6 nights in 2017 (latest data available). This means that, on average, most tourists do not stay more than one night in Tomar. These data are even more significant if we consider that the average stay in Portugal registered in 2017 was 2.7 nights (Pordata, 2019).

This may be due to several factors such as the number of existing attractions and the time required for their visit, their interest and importance, or even their geographical context. In the case of Tomar, looking at the city and its geographical situation, we can empirically observe that the attractions are close to or located in the historic centre, and accessible on foot. Its degree of attractiveness and importance is high, since we have monuments classified as World Heritage by UNESCO. This leads us to conclude that, despite the importance and their high degree of attractiveness, the most important tourist attractions in the city are likely to be visited in just one day, thus justifying the fact that most visitors, who stay overnight in the city, choose to do it for only one night.

Bearing in mind this problem, it is in the interest of the county and the main stakeholders linked to the sector the creation of conditions that allow an increase in the average stay and, consequently, the creation of value and an increase in revenue.

Therefore, the creation of a Viewpoints Route in Tomar began, a cross-cutting product throughout the county, involving the various parishes that are part of it, with equal responsibility sharing.

In addition, the intention is to create an innovative product that will show not only alternative attractions to those that are part of the so-called traditional circuit of the city but also places of cultural, scenic and natural interest unknown to the visitor hitherto, hardly visited therefore, that by itself and independently, would not have the potential to attract visitors.

This product will be a value catalyst concerning the supply, contributing to the economic development of various locations scattered throughout the county, and the demand, through the differentiated and innovative experience that it will provide.

The work assumes some objectives with the development of a collective culture of “cooperation to compete” (Araújo, 2017), since it is necessary the collaboration of several actors, coordinated by the county, aiming a common achievement. The joint work of all will contribute to achieve several aims like the development of the county

and to the redistribution of wealth, but also, from the point of view of external competition, to increase the degree of attractiveness of the territory compared to the competitors, not forgetting the first objective, which is to present a product that allows the length of stay of tourists in the city.

At the same time, it is intended to enhance this cultural heritage, which is part of the identity of the town of Tomar and which is forgotten and in need of interventions.

The work is structured in 5 chapters: introduction; theoretical background; methodology; proposal of a Viewpoints Route of Tomar; conclusions and future developments.

2. TOURISM AND TOURIST ROUTES

According to Briedenham and Wickens (2003), tourist routes can be defined as the creation of a cluster of activities and attractions that encourage cooperation between different rural areas and that serve as a vehicle to stimulate economic development through tourism.

The concept of route tourism is simple and consists of bringing together a series of attractions in order to promote local tourism, encouraging travellers to explore them. They can vary in duration, scale, theme and in the segments they attract.

There are several factors that support the creation of tourism products on routes, such as: redistributing revenue from tourism, signalling unknown tourist points of interest, increasing the attractiveness of the territory, increasing the average stay and visitor spending, attracting new housing and market segments and increasing the sustainability of tourist products (Araújo, 2017).

This type of product is normally associated with drive tourism, in which the visitor moves in his/her own vehicle, or in a rental car, along the paths that are defined on the route, bringing to the experience the feeling of freedom and flexibility, since the tourist can do it according to the time he/she has available and at his/her own pace.

Taking this factor into account, it is important that the route is developed on a road network that has the necessary conditions for travelling between the points of interest and that does not cause discomfort or feelings of insecurity for those who go through it.

In order to define the route to be created, several factors must be considered being crucial to its success. One of them is the common factor of all points of attraction or its theme. It is important that there is a concrete objective that defines it (López-Guzmán, Vicente & Merinero-Rodríguez, 2006). Its attractiveness and the interest that it can arouse in visitors depends on this factor, not dispersing their attention and focusing on the theme that motivated their visit.

The itinerary must be perfectly signposted along the entire route and have a point that is defined as the initial one, where the coordinating entity of the route offers visitors all the elements necessary for its correct use.

The steps for creating a route are different depending on the stage in which the tourist product is found. Be it the creation of a route based on the union of points between locations where there are already identified tourist products, or the creation of a

route that involves the generation of those products (López-Guzmán, Vicente & Merinero-Rodríguez, 2006).

In one case or another, there are several steps that are common and that can be summarized in the following points: constitution of a group of stakeholders and a coordinating or managing entity; choice of start and end locations and the structuring of one’s own itinerary; identification of existing tourist resources or products and places to visit; choosing an attractive name that defines it; image definition; implementation of signage; installation of interpretation infrastructure and creation of supporting documentation; definition of a marketing policy; assessment of the route dynamics (López-Guzmán, Vicente & Merinero-Rodríguez, 2006; Maia, & Baptista, 2011; Carvalho, Teixeira & Gouveia, 2016; Mesquita, 2016; Salvado, Marques, & Remelgado, 2017).

An important factor that determines the success of a tourist route is the existence of a well-defined cooperation network, in which the community itself feels involved and participates. Information for visitors is important, as it is also important to keep the community informed about the objectives of the route and the economic benefits it can generate.

In addition to the previous challenges, there are also legal challenges, since some of these points of view can be located on private land, making it necessary to sign contracts with the owners in order to allow access or obtain a declaration of tourist interest, with an expropriation procedure.

The intervention of these spaces also generates several environmental challenges, being necessary the adoption of procedures of environmental performance in an integrated and sustainable way, which minimizes the impact of the visit.

In Portugal there are already some successful viewpoint routes, such as the Douro Viewpoints Route created by the Association of Counties of the North Douro Valley (AMVDN) and the Viewpoint Routes of the County of Carraceda de Ansiães and Mondim de Basto, created by the respective counties.

3. METHODOLOGY

The county of Tomar has a well-signposted tourist attraction centre, where there has been a strong growth in the number of tourists, the creation of new support infrastructures, through private projects, and public investment in terms of promoting and disseminating the county outside the region. This core is the city itself, whose historical interest attracts numerous visitors, both national and international. Its history is closely linked to the history of Portugal, having been the headquarters of the Military Orders of the Temple and of Christ. The city of Tomar is characterized by a great artistic, cultural and natural richness, with the Templar Castle and the Convent of Christ being its greatest ex-libris and one of the most visited monuments.

Despite the international interest, and the growth potential that is identified, there is a need to reassess the numbers associated with tourism. The average stay is one of the values that is one point below the national average, which assumes that, despite the increasing tourist flows, the time spent in the city is not enough to maximize, from an economic point of view, the travel of those visitors (Pordata, 2019).

There is, therefore, a need to create differentiating products that are complementary to the stay, that provide alternatives to tourists and a broader experience in the county.

Currently the visit is limited to the city and there are no conditions that allow visitors to go much further than the city.

The creation of a tourist route that crosses several places of interest already identified and scattered throughout the county, will be a motivating factor for staying.

There are several less known viewpoints in Tomar, but with great historical and scenic value, which allows visitors to enjoy the magnificent and diverse landscapes. So, the creation of the Viewpoints Route of Tomar has also as aim the safeguarding and promotion of these places.

For the experience to be as complete as possible, it is important the definition of a good plan in order to interpret the places. Aiming to make the product more interesting and innovative and also to attract new types of visitors and some housing markets, several technologies will be introduced for their interpretation.

The project started in 2019 and through the organization of an intermunicipal network, made up of representatives from the various parishes, the viewpoints whose cultural or landscape interest has a potential for tourist attraction are being identified. This network is coordinated by the county itself, which will define the rules to follow and create an execution plan, having the collaboration of professors and students of the Polytechnic Institute of Tomar.

After the identification and geo-referencing of the viewpoints, the start and end locations of the route will be defined and the itinerary structured. In this process, action procedures will be adopted to overcome all legal challenges and based on the principles of environmental sustainability. At the same time, information and communication technologies will be identified for the interpretation/promotion of the route.

This first phase of the project that constitutes the proposal of the Viewpoints Route in Tomar will be presented in chapter 4. The next step will be the definition of the image, implementation of signage, installation of interpretation infrastructure and creation of supporting documentation. The definition of a marketing policy and the evaluation of the route dynamics are the last phases of the project.

In this case study, it will be used documentary analysis to identify and characterize the viewpoints. It will also be applied the observation technique to collect information at the viewpoint. For this purpose, field notes will be used. This instrument will also be used to collect information for the creation of the road map and for the evaluation of the network dynamics. For this last aspect, the survey technique will also be used, as it is intended to apply a questionnaire to visitors.

4. PROPOSAL OF THE VIEWPOINTS ROUTE OF TOMAR

4.1 Creation of the route

The creation of the Viewpoints Route of Tomar will involve the 11 parishes that are part of the county of Tomar (Figure 1), with a division of equal responsibilities. They are: Além da Ribeira and Pedreira, Asseiceira, Carregueiros, Casais and Alviobeira,

Madalena and Beselga, Olalhas, Paialvo, Sabacheira, São Pedro de Tomar, Serra and Junceira and Tomar (São João Batista and Santa Maria dos Olivais).

Figure 1. Parishes in the county of Tomar



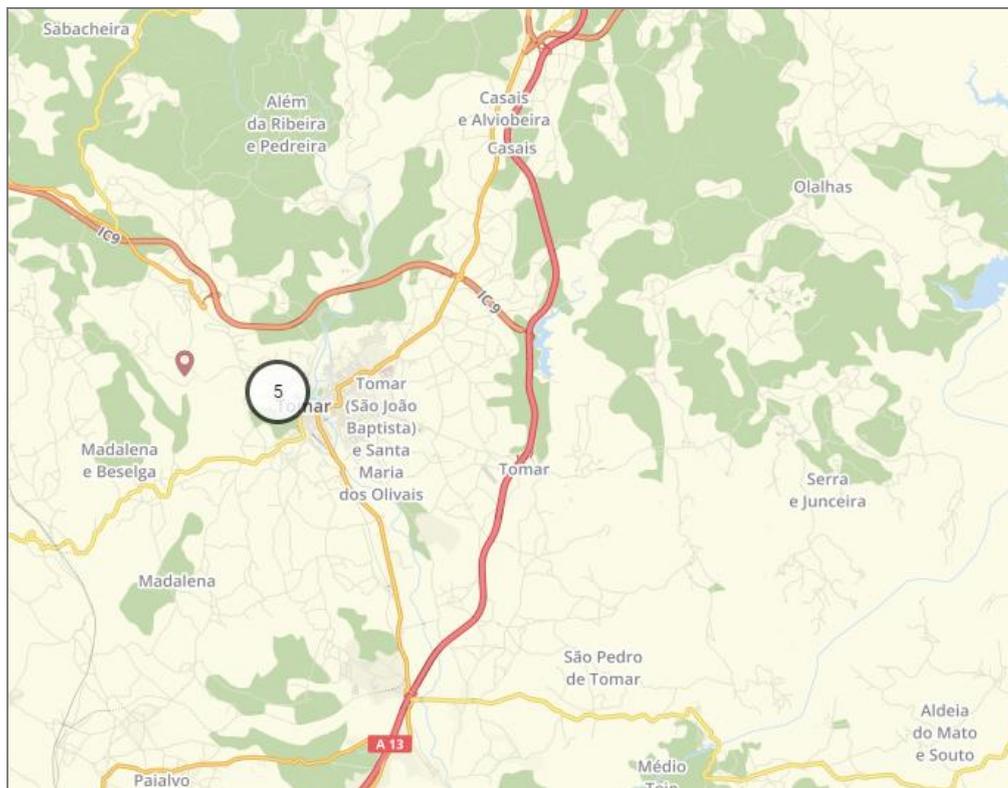
Source: <https://bit.ly/2U4jeZb>

Despite being known by everyone, this heritage is not geo-referenced or documented. The Médio Tejo Tourism Website itself, of which Tomar is part, does not mention any viewpoint in Tomar. The Viewpoint Guide, the world’s viewpoint location platform, has 6 geo-referenced viewpoints: 4 in the parish of Tomar and 2 in the parish of Carregueiros (Figure 2).

The Viewpoints Route of Tomar arises as a need to create alternative tourist products to the city itself, in the municipality of Tomar, which allow a more enriching experience and justify the need for visitors to extend their stay.

The redistribution of wealth and the capture of investments are also factors inherent to its use, at a later stage, in which the critical mass associated with the experience will consequently produce this effect.

Figure 2. Tomar viewpoints geo-referenced on the Viewpoint Guide Platform



Source: <https://bit.ly/30ZAARa>

There are several challenges related to the creation of the Route, some of which are still in its initial phase, such as the existence of homogeneity with regard to the level of attraction of the places that will be identified by the parishes. In other words, in order for the experience to be memorable along the entire route, it is necessary that these places have a levelled impact on the visitor and that there aren't too evident breaks in what the expectation of the next place to visit will be.

It must be taken into account factors such as the dynamics of the route, the time required to travel through it, depending on the means of transport used and, at a later stage of its creation, its maintenance both in terms of logistics and the technology that will be associated with it and that will be essential for its interpretation.

4.2. Promotion of the route using the Information and Communication Technologies (ICT)

4.2.1. Website and Mobile App

The penetration of mobile devices worldwide is already 66 per 100 inhabitants and the Internet penetration rate is 58 per 100 inhabitants (Kemp, 2019). In Portugal, effective users of the mobile service of Internet access reached 7.8 million at the end of the first half of 2019, which corresponds to a penetration of around 75.9 per 100 inhabitants (ANACOM, 2019). This growth is mainly due to the increase in Internet users through mobile devices (ANACOM, 2019).

This strong expansion of mobile devices has changed many of our habits, providing excellent tools for work, learning and entertainment. It is, therefore, an excellent opportunity for tourism. According to Dan, Xiang and Fesenmaier (2014) the use of mobile devices is transforming the visitor experience, changing the way he/she plans, executes and lives the visit.

The Viewpoints Route of Tomar will have a website that will be managed by the County of Tomar, with the collaboration of the parishes. It is intended that this space centralizes all the information about the viewpoints and feeds the other electronic platforms, namely, the Médio Tejo Tourism Website. The website will be based on a Content Management System (CMS) and will be adapted to mobile devices. The information will be available in several languages and the accessibility guidelines for web content of the World Wide Web Consortium (W3C) will be considered.

It is also intended to create an application for the Viewpoints Route of Tomar with all the useful information for the visitor, with the possibility of working offline, in order to avoid Internet access costs. The only application found in this area concerns the Viewpoints Route of Mondim de Basto (Figure 3).

Figure 3. Mondim de Basto Viewpoints Route



Source: <https://bit.ly/2U07kiD>

The application will be developed using an agile development methodology and will consider the main operating systems for mobile devices on the market (Android, iOS and Windows).

4.2.2 QR Codes

The high expansion of mobile devices has fostered the creation of websites suitable for these devices and at the same time has reinforced the importance of other technologies such as QR codes (Marques, 2018).

The QR code was created in 1994 by the Japanese company Denso-Wave and stands out from conventional bar codes for having a much higher storage capacity, namely, 7089 characters (Denso-Wave, 2019).

The use of this technology is free, with numerous free online tools that allow the creation of QR codes, namely the QR Code Generator, GoQR.Me and QR Code Monkey. Some mobile devices already read them automatically, but in most cases, it is necessary to install an application such as QR Code Reader, QR Scanner or QR Droid.

QR codes are now widely used in tourism, namely its promotion and enhancement. It is possible to find QR codes in museums, art galleries, monuments, among other spaces. Its use in viewpoints is therefore an excellent opportunity to contextualize the visitor in the space, making the visit more enriching. In Portugal, the Municipality of Baião is one of the few that created QR codes for its viewpoints (Figure 4).

Figure 4. QR code of Nossa Senhora do Socorro Viewpoint “Aveira” (County of Baião)



Source: <https://bit.ly/37tgMPr>

A QR code with information about that heritage will be made available at each viewpoint on the Viewpoints Route of Tomar. The information will be available in several languages ensuring that it is accessible to all visitors. The QR code is mainly intended for visitors who have not installed the application and who are unable to access the Internet to consult the route's website. The links to these resources will, however, be available at the end of the information, in case the visitor wants to check them later.

4.2.3 Audio guides

Audio guides will also be used on the Viewpoints Route of Tomar. These sound files, usually in MP3 format, can be downloaded from the Internet or from specific hotspots using wireless technologies such as Bluetooth (Marques, 2018), allowing visitors to have access to information in audio format, while visually enjoying the heritage. They are also a way of making tourism more accessible.

The playback of audio guides can be done manually or can be activated by GPS coordinates (Global Positioning System), that is, when the mobile device with GPS is at the defined latitude and longitude, the audio file with detailed information about the location is played (Marques, 2018).

Currently it is possible to find many websites and applications that offer audio guides. The Spanish website for Civitalis is one of them (Figure 5), here you can, for example, find information about the viewpoints of Santa Lúzia and Senhora do Monte (Lisbon County).

Figure 5. Audio-Guides in Lisbon provided by Civitalis

Puntos de interés incluidos		
▷ 000 Lisboa	▷ 001 History	▷ 001A Azulejos
▷ 001B Elevadores	▷ 001C Elevador da Bica	▷ 001D Elevador da Glória
▷ 001E Elevador da Lavra	▷ 001F Miradouros	▷ 001G Miradouro São Pedro Alcântara
▷ 001H Miradouro de Santa Luzia	▷ 001i Miradouro da Senhora do Monte	▷ 001J Fado
▷ 001K Bacalhau	▷ 001L Eléctricos	▷ 002 Palácio Nacional da Ajuda
▷ 003 Museu Nacional dos Coches	▷ 004 Mosterio dos Jerónimos	▷ 004A History
▷ 004B Igreja de Santa Maria	▷ 004C El Lujo Manuelino del Pórtico	▷ 004D El Claustro

Source: <https://bit.ly/36zhzNS>

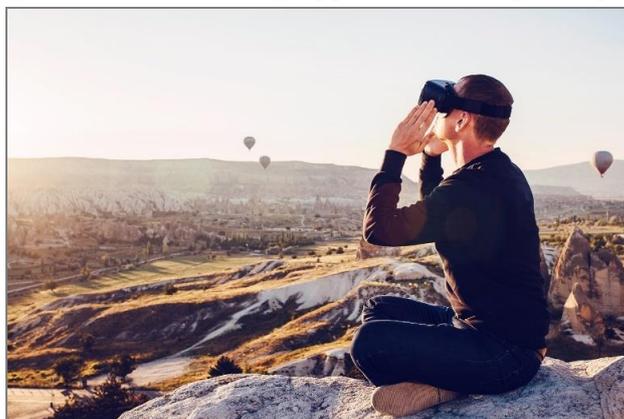
An audio guide will be provided for the Viewpoints Route of Tomar. The audio guide can be downloaded through the Viewpoints Route of Tomar website, the mobile application or the national platform Audite (Free Online Audio Guide Platform).

4.2.4. Immersive technologies

The services based on immersive technologies for mobile devices have increased significantly in the field of tourism. These technologies, which include virtual reality and augmented reality, allow us to provide additional information about what the visitor is seeing, in order to make the visit memorable.

Through virtual reality, visitors emerge in a virtual world, experiencing a variety of sensory stimuli that make the experience unique. One of the possibilities is its use to enjoy experiences in spaces near the viewpoint whose access is limited by nature or whose state of conservation no longer allows its visit (Figure 6).

Figure 6. Virtual reality applied to heritage: Hop180



Source: <https://bit.ly/2voAPAE>

Through augmented reality, a real scenario with overlapping virtual information is presented. This technology, therefore, facilitates the demonstration of the archaeological and cultural heritage, with the possibility for visitors to view the real image of the monument, ruin, or object with complementary virtual images, giving them a perspective of the temporal evolution, of the changes that it suffered, its meaning, etc. (Silva, 2009). In viewpoints, where the damage to property is clear, it is possible to have an idea of how it was originally, as well as of the surrounding spaces (Figure 7).

Figure 7. Augmented reality applied to heritage: Calafell Open Air Museum



Source: <https://bit.ly/2O070Ne>

Through this service it is also possible to determine with some accuracy the positioning and orientation of the viewpoint and the surrounding cultural heritage, providing textual and graphic information about it, as well as the distance the visitor is from it.

To read virtual reality content it is required an application and glasses, while for augmented reality content one application is enough. Both technologies require mobile devices with minimal characteristics for their execution.

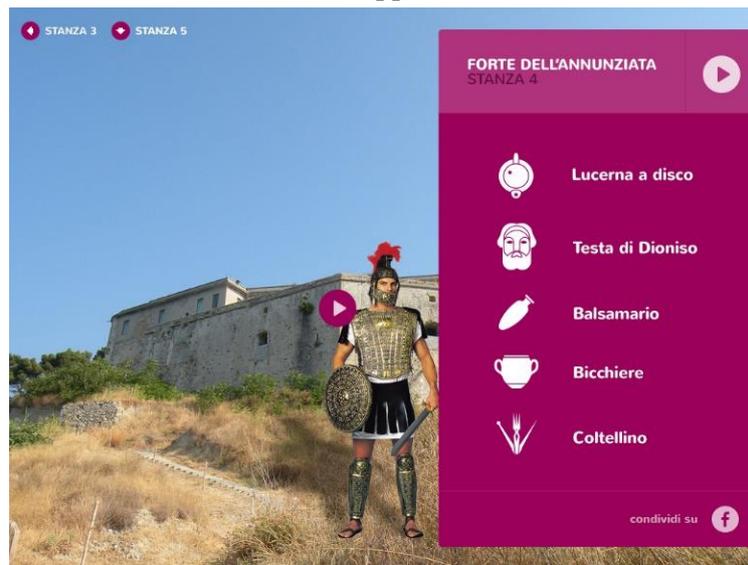
Through the existing cooperation between the County of Tomar and the Polytechnic Institute of Tomar, the creation of immersive content for the Viewpoints Route of Tomar will be promoted, and then distributed through the website and the application for mobile devices.

4.2.5 Gamification

The term gamification is based on the word game and consists of using the mechanics of the game in contexts that are not those of a game (Deterding, Dixon, Khaled, & Nacke, 2011). Although the concept is not new, the term only gained prominence at the beginning of this decade thanks to the evolution of Information and Communication Technologies, emerging in association with the British programmer Nick Pelling (Marques, 2017).

Gamification quickly became a strategy in numerous organizations in almost every sector. Heritage is no exception, with several examples in this area (Xu, Weber & Buhalis, 2013) (Figure 8), including in the city of Tomar (Almeida, Marques, Almeida & Lopes, 2018).

Figure 8. Gamification applied to heritage: Liguria Heritage augmented reality mobile app



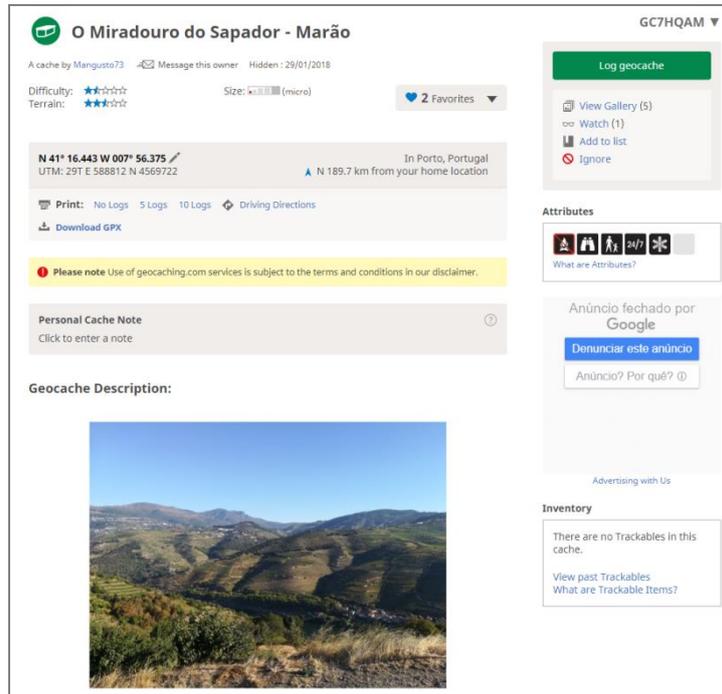
Source: <https://bit.ly/2RwLpyd>

It is intended the Viewpoints Route of Tomar to use the application for mobile devices to provide a gamification experience to visitors. At each viewpoint a question will be asked about the space and if the answer is correct, a code will be unlocked. For each viewpoint there will be a diverse range of questions so that visitors do not share answers with each other, and the question will only be accessible in the space surrounding the viewpoint (validation made by geo-reference). If the visitor unblocks all the codes of the route, he/she will have access to a certificate of the Viewpoints Route of Tomar, as well as, a voucher to collect a souvenir in the Tourist Office of the County of Tomar.

It is also intended to use geocaching, an outdoor activity that makes use of GPS receivers to search for a hidden container. This container has the name of geocache and contains a book or record sheet (logbook/log sheets), game instructions (stash note), writing material (pencil or pen) and objects for exchange (key rings, books, dolls, etc. (Marques, 2016). This task can be quite challenging, considering that the information from GPS receivers presents a slight error due to technological limitations and that there is a lot of creativity combined with the creation of the geocache and its hiding place.

Currently, there are about 3 million geocaches and more than 6 million geocachers. Most geocaches have as main objective to promote and enhance the heritage (Figure 9).

Figure 9. Geocaching applied to heritage: The Sapador Viewpoint (Marão)



Source: <https://bit.ly/3aGuQXX>

It is intended to create a cache, of the multi-cache type. To find the coordinates of this type of cache, it will be necessary for geocachers to pass through several intermediate points in order to collect information. These intermediate points correspond to the different viewpoints, with the final cache near the end of the itinerary.

5. CONCLUSIONS AND FUTURE DEVELOPMENTS

The Viewpoints Route of Tomar project is the result of the need to create an innovative product that presents alternative attractions to those that are part of the usual circuit in the city of Tomar. This route aims to promote and enhance a heritage of high cultural, scenic and natural interest that is currently underused - the viewpoints of Tomar - and which would individually have more difficulty in attracting visitors.

This project started in 2019 and involves several stakeholders, including the County of Tomar itself, which has the role of coordinator, and the Polytechnic Institute of Tomar. The itinerary is being created with the support of the parish councils, and several viewpoints have already been identified and geo-referenced. This process raises enormous challenges, not only at a technical level, but also at a legal, economic and environmental sustainability level.

The next phase includes the definition of the image of the route, implementation of signage, installation of interpretation infrastructure and the creation of supporting documentation. It follows the definition of the marketing policy and the assessment of the route dynamics.

This project aims to differentiate itself due to its heritage richness, but also using information and communication technologies. With them, it is intended to promote and enhance the cultural heritage through memorable visits. The diversity of technologies to be used (website, mobile application, QR codes, audio guides, immersive technologies and gamification) aims to meet the different target audiences (including the younger audiences such as Generation Y and Z) and, simultaneously, make information more accessible.

As a result of the creation of the Viewpoints Route of Tomar, it is intended to create conditions that in the future will increase the stay time of the municipality visitors, provide to the actors who work the tourism in the field a greater efficiency in the management of the visit and widening it to the territory now identified, to enable a greater redistribution of the generated wealth. From the tourist point of view, the visit to places that have not been explored until now, should create conditions for the development of new enterprises related to the sector in the provision of support services to the Route and its visitors. Its effect is intended to be a catalyst for investment and economic development, through the creation of new jobs and revenue generation.

The touristic experience associated with the visit to the municipality, until now centered on the visit to the city of Tomar, will come out enriched and differentiated, with its extension to places until now defined as hidden, and that are only known by its inhabitants or by some visitors who like to explore this type of places.

REFERENCES

- Almeida, R. N., Marques, C. G., Almeida, P., & Lopes, E. (2018). From the Convent to the streets: Recentering touristic products through gamification and ICT based strategies. *International Journal of Scientific Management and Tourism*, 4(2), pp. 37-50.
- ANACOM (2019). Internet móvel chega aos 7,8 milhões de utilizadores, *ANACOM - Autoridade Nacional de Comunicações*. Retrieved December 22, 2019 from <https://bit.ly/2tR0MZ9>
- Araújo, S. (2017). *Rotas Turísticas e Sistemas de Recomendação no Norte de Portugal: uma análise do perfil do visitante*. Master Thesis. Porto: Instituto Superior de Contabilidade e Administração do Porto, Instituto Politécnico do Porto.
- Briedenham, J. & Wickens, E. (2003), Tourism routes as a tool for the economic development of rural areas - vibrant hope or impossible dream? *Tourism Management* 25 (2004), 71-79.
- Carvalho, A., Teixeira, B. & Gouveia, M. (2016). Proposta de uma rota turístico-religiosa: Bragança-Mirandela. In *XVII Encontro AECA* (pp. 1-15). Bragança.
- Dan, W. Xiang, Z., & Fesenmaier, D. R. (2014). Adapting to the Mobile World: A Model of Smartphone Use, *Annals of Tourism Research*, 48, 11–26.
- Denso-Wave (2019). What is a QR Code? QR Code.com. Retrieved October 23, 2019 from <http://www.qrcode.com/en/about>

- Deterding, S., Dixon, D., Khaled, R., & Nacke, L. (2011). From game design elements to gamefulness: defining "gamification". In *Proceedings of the 15th International Academic MindTrek Conference: Envisioning Future Media Environments (MindTrek '11)*. New York, NY: ACM.
- Kemp, S. (2019). Digital 2019, We Are Social. Retrieved December 22, 2019 from <https://bit.ly/2Rqto4u>
- López-Guzmán, T., Vicente, F. J. L., & Merinero-Rodríguez, R. (2006). Las rutas turísticas como motor de desarrollo económico local. La ruta del "Tempranillo", *Estudios Turísticos*, 167 (2006), 131-145.
- Maia, S. V., & Baptista, M. M. (2011). As rotas como estratégia turística. Percepção de benefícios e obstáculos na constituição de rotas museológicas na região de Aveiro. In *International Conference on Tourism & Management Studies - Algarve 2011*. (672-682). Faro.
- Marques, C. (2016). *Contextos educativos formais e não formais: os desafios do Geocaching*. Castelo Branco: Instituto Politécnico de Castelo Branco.
- Marques, C. (2017). Gamification: conceitos e aplicações. In *1.ª Conferência Ibérica em Gestão Estratégica de Capital Humano (CIGECH)*. Tomar: Instituto Politécnico de Tomar.
- Marques, C. (2018). Mobile technologies for tourism and culture. *Superavit: Revista de Gestão & Ideias*, 3, 67-77.
- Mesquita, A. S. B. (2016). Efeitos turísticos da Rota do Românico: os Mosteiros do Salvador de Travanca (Amarante) e do Salvador de Paço de Sousa (Penafiel), *Pasos – Revista de Turismo y Patrimonio Cultural*, 14(4), 999-1012.
- Salvado, J., Marques, J. & Remelgado, P. (2017). Dinâmicas Culturais nas Rotas dos Vinhos como forma de criação de valor na experiência turística, *RT&D - Revista de Turismo & Desenvolvimento*, 27-28-2017(1), 1043-1060.
- Silva, L. O. (2009). Potencialidades dos serviços móveis de Realidade Aumentada aplicados ao Turismo. In *Actas do 8º Congresso LUSOCOM* (pp. 2296-2314). Lisboa: Universidade Lusófona.
- Xu, F., Weber, J., & Buhalis, D. (2013). Gamification in Tourism. In Z. Xiang & I. Tussyadiah (Eds), *Information and Communication Technologies in Tourism 2014*. Cham: Springer.